

REMARKS

It is respectfully requested that this application be reconsidered in view of the above amendments and the following remarks and that all of the claims remaining be allowed.

Claim Amendments

Claim 33 has been canceled without prejudice or disclaimer.

Claim 26 has been amended to recite a method of transplantation. Support for this amendment can be found, for example, at page 20, lines 13-15 and page 21, lines 13-17.

New claims 34-39 have been added. Support for these new claims can be found, for example, as follows:

| Claim Number | Exemplary Support |
|---------------------|--------------------------|
| 34-35 | Page 6, lines 25-29 |
| 36-37 | Page 17, lines 13-16 |
| 38-39 | Page 21, line 19 |

No new matter has been added by these amendments. The Examiner is hereby requested to enter these amendments.

Applicants submit that all claim amendments presented herein or previously are made solely in the interest of expediting allowance of the claims and should not be interpreted as acquiescence to any rejections or ground of unpatentability. Applicants reserve the right to file at least one continuing application to pursue any subject matter that is canceled or removed from prosecution due to the amendments.

Rejection Under 35 U.S.C. §101

The rejection of claim 33 under 35 U.S.C. §101, for allegedly reading on a human being, is now moot in view of the cancellation of claim 33. Therefore, withdrawal of this rejection is respectfully requested.

Rejections Under 35 U.S.C. §102

A. The rejection of claim 33 under 35 U.S.C. §102(b) in view of Strong et al. (EMBO J. 17:3351-3362, 1998) is now moot since claim 33 has been canceled. Accordingly, withdrawal of this rejection is respectfully requested.

B. Claims 26 and 33 stand rejected under 35 U.S.C. §102(e) in view of U.S. Patent No. 6,596,268 ("the '268 patent") and separately in view of U.S. Patent No. 6,649,157 ("the '157 patent"). Claim 33 has been canceled, and hence the rejections with respect to claim 33 are now moot. The rejections with respect to claim 26 are respectfully traversed for the reasons set forth below.

The standard of anticipation under 35 U.S.C. §102 is that each and every element of the claim must be found in the cited reference. *In re Marshall*, 198 USPQ 344 (CCPA 1978).

Claim 26, as amended, is directed to a method of transplanting into a mammal a cellular composition with a reduced amount of neoplastic cells. The method comprises two steps. In the first step, a mixed cellular composition which comprises neoplastic cells is treated with a virus that is capable of selectively killing the neoplastic cells under conditions which result in substantial killing of the neoplastic cells so as to selectively remove neoplastic cells from the composition. The types of the neoplastic cells and viruses are specified in the claim. In the second step, the virus-treated composition is transplanted into the mammal.

The '268 patent teaches the treatment of ras-mediated neoplasms using an adenovirus lacking the gene encoding the VAI RNA. The '157 patent teaches the treatment of ras-mediated neoplasms using an HSV that comprises a mutation in the γ_1 34.5 gene. Neither reference

discloses transplanting a cellular composition that have been treated with any of the viruses recited in claim 26. Therefore, the '268 or '157 patent does not teach each and every element of the claimed invention.

Accordingly, the requirement under 35 U.S.C. §102 is not met, and withdrawal of the rejections is respectfully requested.

Rejection Under 35 U.S.C. §103

The rejection of claims 27-32 under 35 U.S.C. §103 over the '268 or '157 patent, in view of Stewart et al. (Bone Marrow Transplant. 23(2):111-117, 1999), is respectfully traversed for the reasons set forth below.

To properly issue a rejection under 35 U.S.C. §103, the USPTO bears the initial burden to establish a prima facie case of obviousness by meeting three criteria. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings to arrive at the claimed invention. *In re Vaeck*, 20 USPQ 2d 1438 (Fed. Cir. 1991). Second, there must be a reasonable expectation of success. *Id.* Finally, the prior art reference or the combination of references must teach or suggest all the claim limitations. *In re Royka*, 180 USPQ 580 (CCPA 1974).

These criteria are not met in the instant case. Claim 27 is directed to a method of transplanting into a mammal a cellular composition with a reduced amount of neoplastic cells, wherein the cellular composition comprises hematopoietic cells. The method comprises two steps. In the first step, the cellular composition which comprises neoplastic cells is treated with a virus that is capable of selectively killing the neoplastic cells under conditions which result in substantial killing of the neoplastic cells so as to selectively remove neoplastic cells from the composition. The types of the neoplastic cells and viruses are specified in the claim. In the second step, the virus-treated composition is transplanted into the mammal.

As discussed above, the '268 patent teaches the treatment of ras-mediated neoplasms using an adenovirus lacking the gene encoding the VAI RNA, and the '157 patent teaches the treatment of ras-mediated neoplasms using an HSV that comprises a mutation in the $\gamma_134.5$ gene. Stewart et al. teach methods of mobilizing autologous blood stem cells from bone marrow to blood. Nowhere does the combination of these references provide any motivation or suggestion to modify the combined teaching of the references to arrive at the claimed invention. The Office Action states that an ordinary skilled artisan would have been motivated to combine the teachings because,

as taught by Stewart, the contamination of blood stem cells with neoplastic cells is a recurring problem that has ineffective "purging" methods to overcome the problem, and '268 and '157 teach an efficient purging method that is indicated to be useful with hematopoietic cells for treating cancers such as lymphomas and leukemias, and is therefore able to overcome a persistent problem in the art. (first paragraph on page 7 of the Office Action).

This contention is flawed with impermissible hindsight. The '268 or '157 patent does not, even with the slightest hint, teach stem cell transplantation or purging of stem cells. Therefore, ordinary skilled artisans would not have concluded that the patent teaches an efficient purging method and become motivated to combine it with Stewart et al. The statement in the Office Action, that '268 and '157 teach an efficient purging method, apparently resulted from the fact that the Examiner had the benefit of reading the present application first.

Furthermore, Stewart et al. teach two problems of the then-available in vitro purging techniques: they result in significant stem cell loss from the autograft, and they only treat the graft, not the patient (first paragraph, right column, page 111 of Stewart et al.) Since the '268 or '157 patent does not specifically disclose any solution to these problems, no motivation or suggestion was provided to combine the references to solve the problem. In fact, since purging involves treating only the graft but not the patient, Stewart et al. teach away from purging and, consequently, the claimed invention.

In view of the above, the criteria under 35 U.S.C. §103 are not met, and claim 27 is not obvious over the cited references. Claims 28-29 depend from claim 27, further reciting the source of the stem cells. Claims 30-32 are similar to claim 27 but recite tissues, organs and portions thereof. These claims are likewise not obvious over the cited references.

Accordingly, withdrawal of this rejection is respectfully requested.

Information Disclosure Statement

Applicant filed a Second Supplemental Information Disclosure Statement on April 22, 2002, and requests that the Examiner return an initialed copy of the PTO-1449 form to indicate that the reference has been considered.

Conclusions

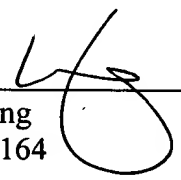
For the reasons set forth above, Applicants submit that the claims of this application are patentable. Reconsideration and withdrawal of the Examiner's rejections are hereby requested. Allowance of the claims remaining in this application is earnestly solicited.

In the event that a telephone conversation could expedite the prosecution of this application, the Examiner is requested to call the undersigned at (650) 839-5044.

Please apply any charges or credits to deposit account 06-1050.

Respectfully submitted,

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